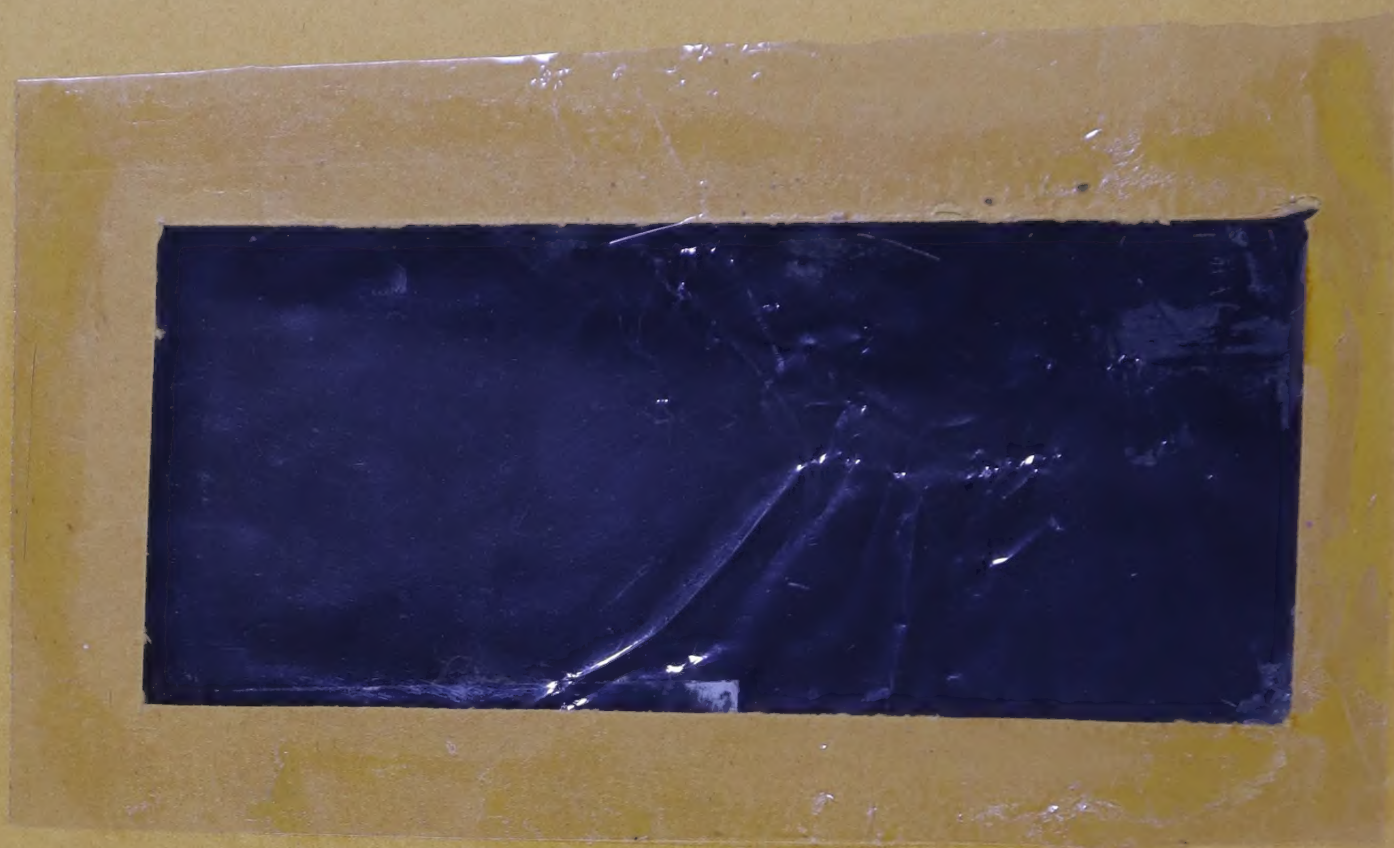


**Health Research for
Development: the
continuing challenge**



Health Research for Development: the continuing challenge

*A discussion paper prepared for the
International Conference on Health
Research for Development*

BANGKOK, 10–13 OCTOBER 2000



**INTERNATIONAL CONFERENCE
ON HEALTH RESEARCH
FOR DEVELOPMENT**

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Preface

This document has been prepared as background material for the discussions at the International Conference on Health Research for Development, to be held in Bangkok on 10–13 October 2000. It is intended to stimulate reflection on the current status of health research worldwide and on an appropriate and forward-looking strategy for the coming years. The opinions expressed in the paper reflect the various discussions held as part of the preparatory process for the Conference, and combine the outcomes of three separate strands of analysis and reflection:

1. A series of consultations with countries and regions, in which researchers, research managers, and representatives of government and nongovernmental organizations were asked to provide information on their experiences in health research and give their ideas on critical issues for the coming years and how to address them.
2. An analysis of major health research initiatives introduced in the past 10 years or so, based on interviews, round table discussions and examination of available documents.
3. A series of consultations with donor organizations and development agencies, focusing particularly on the structural aspects of international governance for health research for development.

The six regional reports and the preliminary conclusions of the analysis were presented and discussed at a “synthesis” meeting, held in Prangins, Switzerland, on 5–7 July 2000. This meeting brought together over 40 people including *inter alia* representatives of the six regions involved in the consultations, international and development agencies, members of the International Organizing Committee of the Bangkok Conference, and the analytical team. The main themes of the discussions in Prangins were incorporated into the document, which was then circulated to all participants for further comment.

A further meeting of the regional coordinators and the analytical team in Geneva on 24–25 August reviewed the comments received and extracted the “key challenges” (section 5) from the earlier consultations and discussions.

Section 4.2.5 and Annex 1 were prepared later by a small team charged with reviewing the current global architecture for health research and proposing options for change.

It is important to note that the current paper is a working document, and will be revised in line with the outcome of the deliberations in Bangkok. It necessarily represents a synthesis of the views expressed in the various regional consultations and other discussions, and as such can provide only a partial reflection of the situation in any given region or country. In order to obtain a better appreciation of the wide diversity between regions—and between countries within regions—it should be read in conjunction with the six regional reports (see page 38) and other documentation which will be available at the Bangkok Conference, and on the Conference Website (www.conference2000.ch).

The people who contributed to this paper in any way are listed in Annex 2. The drafting team sincerely apologizes to anyone whose name has inadvertently been omitted; please inform the team of any such omissions, by contacting Pat Butler, COHRED, c/o UNDP, Palais des Nations, 1211 Geneva 10, Switzerland (email: butler@cohred.ch).

1. Introduction

Just ten years ago, the Commission on Health Research for Development proposed a set of strategies through which the potential of research could be harnessed to accelerate health improvements and to overcome health inequities throughout the world (Commission on Health Research for Development, 1990). The Commission envisaged a pluralistic, worldwide health research system that would nurture productive national scientific groups linked together in transnational networks able to address both national and global health problems. Noting that only about 5% of the global investment in health research was devoted specifically to the health problems of developing countries, representing over 90% of the disease burden, it made four major recommendations, which can be summarized as follows:

1. All countries should vigorously undertake essential national health research (ENHR); in particular, countries should invest at least 2% of national health expenditures in ENHR.
2. The national efforts of developing countries should be joined together with efforts in industrialized countries in international partnerships that focus on the highest-priority health problems.
3. Larger and more sustained financial support for research from international sources should be mobilized to supplement investments by developing countries; specifically, at least 5% of project and programme aid for the health sector from development aid agencies should be earmarked for research and research capacity strengthening.
4. An international mechanism should be established to monitor progress and to promote financial and technical support for research on health problems of developing countries.

ENHR was the term used by the Commission to describe the health research—and the health research capacity—on which each developing country should concentrate. It encompasses two research approaches: (1) research on country-specific health problems, needed to formulate sound policies and plans for field action; and (2) contributions to global health research aimed at developing new knowledge and technologies to solve health problems of general significance but also relevant to the population of the country.

Ten years on, delegates to the International Conference on Health Research for Development in Bangkok will take stock of national and global initiatives in health research in the intervening years, and assess their impact on health and equity. To what extent have the Commission's recommendations been

implemented, and have they made a real difference in the lives of the disadvantaged? What is the current situation in health research for development and where do we go from here?

Consideration of these questions has to be set against the background of a decade of unprecedented change and upheaval in almost all sectors of society. The collapse of the communist bloc, the economic crisis in Asia, the numerous ethnic and territorial conflicts throughout the world, massive population movements as a result of

migration, conflict or natural disaster—all these reflect a world that is in many ways less stable than the world of the 1980s. At the same time, rapidly increasing globalization, and the revolution in information and communications technology, mean that we are—more than ever before—a global village and that what happens in one country potentially affects every other.

Nowhere is this more clear than in health. It is a truism that disease is no respecter of national boundaries and the rapid spread of a number of new and re-emerging diseases, including AIDS, drug-resistant malaria, and tuberculosis, has emphasized once again our interdependence—and vulnerability—in the face of these global threats. At the same time, major scientific breakthroughs, such as the human genome project, innovative technologies that have accelerated drug and vaccine development, and the crucial evaluative frameworks now available to appraise health reform efforts and the performance of national health systems (WHO, 2000) hold the promise of more effective prevention, management and treatment for an array of critical health problems. Poor health—and more broadly poverty and vulnerability—have never received as much genuine political attention as we recently witnessed during the September Millennium Summit of world leaders at the United Nations in New York.

The inherent danger in the powerful and inexorable forces of globalization, and similarly with the revolutionary applications now arising from new genetic understanding, is their potential to accentuate inequality. While their fruits are enjoyed by those nations and groups with the means of access, they are generally not available to the world's poor who, instead, progressively crowd the margins behind barriers that are ever more difficult to penetrate. This may prove a metaphor for health in the twenty-first century: the choice between an inclusive world focused on health problems that afflict the vulnerable, or a growing marginalization of those with the greatest burden from the means to improve their situation.

2. International initiatives in the 1990s

The Commission on Health Research for Development argued that implementation of its four key recommendations would “mobilize the power of research to enable developing countries to strengthen health action and to discover new and more effective means to deal with unsolved health problems”. The report led to the setting up of an interim Task Force on Health Research for Development under the joint sponsorship of the International Development Research Centre (IDRC), Canada, and the Swedish Agency for Research Cooperation with Developing Countries (SAREC). The Task Force organized a workshop in Pattaya, Thailand, at which participants critically examined the concept of ENHR and defined its main elements (TFHRD, 1991). The Task Force then began to work with countries that wished to implement the ENHR strategy.

ENHR

The Commission recommended that each developing country should adopt ENHR as a strategy for organizing and managing health research.

- The goal of ENHR is to promote health and development on the basis of equity and social justice.
- The content of ENHR includes the traditional types of research commonly described as epidemiology, social and behavioural research, clinical and biomedical research, health systems research and policy analysis; but it is specifically oriented towards the most important problems affecting the population, with particular emphasis on the poor, disadvantaged and other vulnerable groups whose health needs are often overlooked or ignored.
- The mode of operation of ENHR is characterized by inclusiveness, aiming to involve researchers, health care providers, and representatives of the community in planning, promoting and implementing research programmes.

Source: TFHRD (1991)

In March 1993, 18 countries presented their experiences with the ENHR strategy at the Second International Conference on Health Research for Development in Geneva. Participants in this Conference adopted a Declaration agreeing to the establishment of a mechanism—the Council on Health Research for Development—to “promote, facilitate, support and evaluate the ENHR strategy and other health issues of international priority” (COHRED, 1993).

Three months after the Commission’s report was presented at an international conference in Stockholm in 1990, the techni-

cal discussions at the World Health Assembly focused on the theme “The role of health research in the strategy for Health for All by the Year 2000”. While WHO itself is not primarily a research agency, one of its constitutional functions is “to promote and conduct research in the field of health” (WHO, 1989). Research is incorporated in a number of its programmes and the Organization facilitates and supports research through collaborative special programmes such as those focused on human reproduction and tropical diseases. Participants at the Health Assembly in 1990 agreed that health research should be an integral component of national strategies for Health for All, and called on WHO to take a more active leadership role in monitoring changing disease patterns, advances in research, and resource flows; informing a global research agenda; coordinating the health research policies of various international players; and promoting selected directions in health research. The resolution adopted (WHA43.19) also included a call to WHO

Member States to undertake essential health research appropriate to national needs. More recently, with the restructuring of the Organization, WHO's commitment to placing evidence at the centre of its efforts, and to promoting and fostering health research, has been strongly reiterated (WHO, 1999)

In 1993, the World Bank, in collaboration with WHO, produced *Investing in health* (World Bank, 1993). A follow-on conference in Ottawa, co-sponsored by IDRC, WHO and the World Bank, resulted in three major new initiatives:

- an ad hoc review of health research priorities, for which WHO provided the Secretariat;
- a research effort to test the development of nationally defined health intervention packages;
- an examination of issues related to increasing and redirecting investment in equity-oriented health development, led by the World Bank.

The first initiative resulted in the report of the Ad Hoc Committee on Health Research Relating to Future Intervention Options (WHO, 1996), which outlined a five-step process for deciding on allocation of health research funds. In addition to recommending specific areas as key investments for health research, the Ad Hoc Committee also recommended the formation of a mechanism to review needs and opportunities for global health research and development, with the aim of focusing resources on the highest priority tasks to correct the imbalance in allocation of research funds. This mechanism was given substance through the Global Forum for Health Research, established in 1997.

The Ad Hoc Committee on Health Research Relating to Future Intervention Options outlined a five-step systematic approach to resource allocation for strategic health research:

1. Calculate the burden attributable to the disease, condition or risk factor (how big is the health problem?).
2. Identify the reasons for the persistence of the burden of the disease or condition in a population (why does the disease burden persist?).
3. Judge the adequacy of the current knowledge base (is enough known about the problem now to consider possible interventions?).
4. Assess the promise of the research and development effort (how cost-effective will these interventions be? can they be developed soon and for a reasonable outlay?).
5. Assess the current level of effort (how much is already being done about the problem?).

Growing numbers of international programmes and networks concerned with strengthening developing country health research have been set up over the past 10–20 years. By working with able scientific groups, many based in developing countries, they have sought to strengthen disciplinary expertise, develop a "critical mass" of researchers, provide support and cross-national connections and link national groups to the international research and policy community.

A relatively recent development is the growth in the number of initiatives involving collaboration between the public and private sectors. These were developed initially to draw the pharmaceutical industry into neglected areas of health research, particularly vaccine and drug development

for infectious and tropical diseases. When big philanthropic foundations, notably the Bill and Melinda Gates Foundation and the Rockefeller Foundation, entered into these partnerships, the stakes suddenly escalated. Global public-private partnerships (GPPPs) offer many potential benefits to all the parties involved. However, as Buse & Walt (2000a; 2000b) point out, they also generate a great deal of uncertainty and some cause for concern. In particular, there is a fear that such partnerships may divert financial resources away from national priorities and that a small group of scientists and funders determine the thrusts and direction of such

partnerships, thus marginalizing the developing countries and their priorities. In addition, there are no guarantees that the infusion of funds from the large philanthropic organizations will continue steadily through the long course of strategic research and product development.

The proliferation of initiatives, networks, groups and coalitions described above and listed in section 2.1 in part reflects the Commission's call for "the steady growth of collaborative international research networks" and "an international support system ... to help developing countries strengthen country-specific health research capacity and action". There is, nevertheless, a concern that many of the recent initiatives are vertical programmes which are not fully integrated in the national health research picture and therefore do not contribute optimally to the development of a strong and self-reliant national health research system. Furthermore, the growth in the number of players at international level—if these players do not develop effective linkages and communications among themselves—could result in a number of weakly aligned initiatives competing for a limited pie, with consequent weakening and fragmentation of the international health research effort. The challenge presented by the Commission 10 years ago remains unfulfilled: "The complex worldwide system for promoting health research on health and development lacks an effective overview mechanism. ... There is no independent, informal voice to speak frankly and critically on the policies and practices of agencies. ... Overview arrangements for assessing progress in research on developing-country health problems, identifying neglected areas, and promoting necessary action are needed to ensure that resources are effectively deployed in a pluralistic worldwide health research system." (Commission on Health Research for Development, 1990, pp. 67–69).

2.1 The major international players

2.1.1 Introduction

Three features have characterized the emerging major players in international health research in the post-Commission era: accelerated growth in numbers; variations in the strategies applied; and increased significance of the private sector, especially industry and philanthropic foundations. The result has been the creation of a complex global health research system. In this context the term *global* refers to the totality of actors in health research, encompassing both the *international* (including regional) institutions that focus on transnational or intercountry problems and the *national* institutions that address country, intercountry and global issues. The response of these players to the challenge of health research for development may be captured in the extent to which they have fulfilled the letter and spirit of the recommendations of the Commission.

Who are these players and what have been their achievements and constraints?

2.1.2 Types of organization (the "big ten")

A literature survey of the *international* component of these actors reveals that there are between 100 and 150 organizations worldwide involved in a significant way in international health research. The Ad Hoc Committee (WHO, 1996) classified these entities into four groups: investors, R&D networks, R&D institutions and health care providers. We have expanded this classification to 10 to highlight the growing significance of the private sector and public/private initiatives. The tenth category comprises national bodies to the extent that they interact on the global scene.

Information obtained on 124 organizations shows their distribution as follows (see Table 1):

- International health organizations (8)
- Development banks (5, not complete)
- Development agencies (17)
- Foundations (16)
- Global programme or disease-based networks (22)
- Thematic initiatives (16)
- International research centres and university-based institutes (17)
- Pharmaceutical industry (3 associations)
- Regional networks (15)
- National bodies (5 examples quoted)

As shown above the global networks and initiatives constitute the largest group, totalling 38 out of the 124, and representing the fastest area of growth. It has been observed (Foundation Centre) that almost half of the 12 000 largest foundations in the United States have been created since 1980, and that their assets were growing by 18% a year by 1996. International health organizations, development banks and bilateral development agencies are a stable longstanding group, except for the two new entities, COHRED (founded in 1993) and Global Forum (1997).

The listing in Table 1 is not intended to be exhaustive, but provides a first attempt at a systematic classification of the major international players. The different categories are not water-tight and there will inevitably be some overlap. The listing is expected to evolve over time as more information becomes available.

Although a systematic and in-depth analysis of the functions performed by the different agencies still has to be done, a preliminary review reveals that knowledge generation is a concern shared by most of the actors, while research capacity strengthening receives relatively little attention.

Table 1. Major international players (n = 124)

I.	International health organizations
	● World Health Organization (WHO) (some of WHO's special programmes and departments may be classified separately elsewhere)
	● Council on Health Research for Development (COHRED)
	● Global Forum for Health Research
	● United Nations Development Programme (UNDP)
	● United Nations Fund for Population Activities (UNFPA)
	● United Nations Children's Fund (UNICEF)
	● United Nations Educational, Scientific & Cultural Organization (UNESCO)
	● Council for Int'l Organizations of Medical Sciences (CIOMS)
II.	Development Banks
	● World Bank
	● Asian Development Bank
	● Inter-American Development Bank
	● African Development Bank
	● Caribbean Development Bank
III.	Development Agencies
	● US Agency for International Development. (USAID)
	● Canadian International Development Agency (CIDA)
	● European Union (EU)
	● Dept. for International Development, UK (DFID)

- Swedish Int'l Development Cooperation Agency/Department for Research Cooperation (Sida/SAREC)
- Norwegian Agency for Development Cooperation (NORAD)
- Swiss Agency for Development & Cooperation (SDC)
- Danish Development Assistance (DANIDA)
- German Agency for Technical Cooperation (GTZ)
- Australian Agency for Int'l Development (AusAID)
- Japanese Int'l Cooperation Agency (JICA)
- Agence Francaise de Developpement (AFD, France)
- Agencia Espanola de Cooperacion Internacional (AECI, Spain)
- Department for International Development Cooperation (FINNIDA, Finland)
- Icelandic International Development Agency (ICEIDA, Iceland)
- Irish Aid (Ireland)
- Netherlands Development Assistance (NEDA)

IV. Foundations & Other Research Funding Agencies (indicative, not exhaustive)

- Bill & Melinda Gates Foundation
- Rockefeller Foundation
- Carnegie Corporation
- Ford Foundation
- Edna McConnell Clark Foundation
- Kellogg Foundation
- Thrasher Foundation
- Helen Keller Int'l, Inc.
- AP Sloan Foundation
- Levi Strauss Int'l
- Wellcome Trust
- Population Council
- Fogarty International Center
- National Institute of Allergy & Infectious Diseases (USA)
- British Council
- Int'l Development Research Centre(Canada)

V. Programme- or Disease-Based Global Networks (indicative, not exhaustive)

- International Clinical Epidemiology Network (INCLEN)
- International Health Policy Program
- Alliance for Health Policy & Systems Research (AHPSR)
- The Cochrane Collaboration
- Scientists for Health & Research for Development (SHARED)
- International Forum for Social Sciences in Health (IFSSH)
- Federation for Int'l Cooperation of Health Services & Systems Research Centers (FICOSSER)
- Int'l Network for Rational Use of Drugs (INRUD)
- UNDP/WB/WHO Special Programme for Research & Training in Tropical Diseases (TDR)
- UNDP/UNFPA/WHO/WB Special Programme of Research, Development & Research Training in Human Reproduction (HRP)
- Int'l Agency for Research on Cancer
- Int'l Center for Genetic Engineering & Biotechnology
- Program on Appropriate Technology in Health
- Training Programs in Epidemiology & Public Health Interventions Network (TEPHINET)
- Int'l Network of Field Sites with Continuous Demographic Evaluation of Populations & Their Health in Developing Countries (INDEPTH)
- Int'l Union against TB & Lung Diseases
- Int'l Planned Parenthood Foundation (IPPF)
- Malaria Foundation Int'l
- Int'l Burden of Disease Network (IBDN)/Virtual Network on Descriptive Epidemiology (VINEDE)
- Adolescent Reproductive Health Network (ARHNe)
- Child Health Research Project (CHR)
- Family Health International (FHI)

VI. Initiatives (Thematic):

- Int'l AIDS Vaccine Initiative (IAVI)
- Global Alliance for Vaccines & Immunization (GAVI)
- Bill & Melinda Gates Children's Vaccine Programme (CVP)
- Roll Back Malaria (WHO)
- Medicines for Malaria Venture (MMV)
- Malaria Vaccine Initiative (MVI)
- LAPDAP
- Sexually Transmitted Infections Diagnostic Group (SDI)
- Int'l Trachoma Initiative
- Global TB Research Initiative
- Child Health Research Initiative
- Tobacco Free Initiative (WHO)
- Initiative on Cardiovascular Health in Developing Countries (CVD Partnership Council)
- Global Programme to Eliminate Filariasis (GPEF)
- Global Programme to Eliminate Lymphatic Filariasis
- Guinea Worm Eradication Program

VII. International Research Centres and University-Based Research Institutes (indicative, not exhaustive)

- ICDDR,B Center for Health & Population Research
- US National Institutes of Health
- US Centers for Disease Control
- Institute of Medicine (USA)
- Harvard Institute for Int'l Development (HIID)
- Karolinska Institute
- Institute of Global Health (California)
- Center for International Health (Norway)
- Int'l Health Support (Belgium; HIV/AIDS, popu'n, repro health)
- Australian Int'l Health Institute
- Institute of Int'l Health & Development (Australia)
- Oswaldo Cruz Foundation (Brazil)
- Mexican Health Foundation
- Center for Research & Advanced Studies (Mexico)
- University-based institutes of medical research
- University-based schools of public health and medicine
- International Centre for Research on Women (ICRW)

VIII. Pharmaceutical Industry

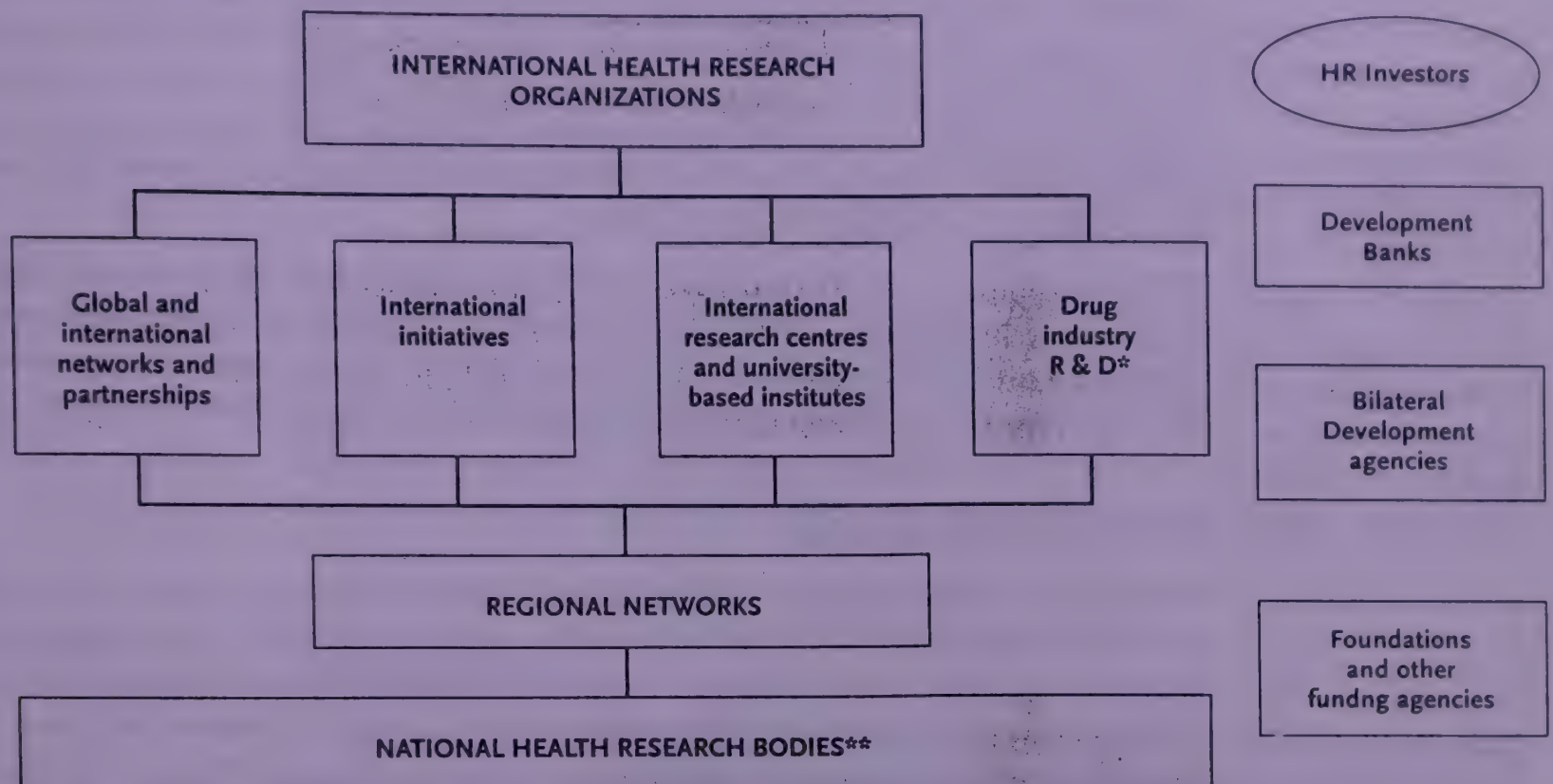
- International Federation of Pharmaceutical Manufacturers Association (IFPMA)
- European Federation of Pharmaceutical Industries Association
- Association of British Pharmaceutical Industries
- (Educational & research foundations established by pharmaceutical companies)
- (See also some examples of Global Public-Private Partnerships under 'Initiatives')

IX. Organizations with Focused Regional Mandates (indicative, not exhaustive)

- Organization of African Unity (OAU)
- Pan American Health Organization
- SEAMEO-Tropmed (Southeast Asia)
- African Medical & Research Foundation Int'l (AMREF)
- Multilateral Initiative on Malaria in Africa (MIM)
- Social Science & Medicine Africa Network (SOMANET)
- Regional Prevention of Maternal Mortality Network (RPMM) (Sub-Saharan Africa)
- Secure the Future (HIV/AIDS, Southern Africa)
- Southern African Development Community Health Sector Coordination Unit
- African Economic Research Consortium
- Various university-based research centers studying regional health issues
- African Malaria Vaccine Testing Network (AMVTN)
- Centre for African Family Studies (CAFS)
- Federation of African Immunological Societies (FAIS)
- Support for Analysis and Research in Africa (SARA)

- X. National bodies (e.g. medical research councils)
- Health Research Council (HRC, New Zealand)
 - Human Sciences Research Council (HSRC, South Africa)
 - Medical Research Council (MRC, UK)
 - National Health and Medical Research Council (NHMRC, Australia)
 - National Institute of Allergy and Infectious Diseases (NIAID, USA)

Fig. 1 Map of the Global Health Research System



* The pharmaceutical industry is both a "doer" and a provider of research funds.

** Countries have both "doers" of research and government agencies that provide research funds.

2.2 Response to specific recommendations of the Commission

The first recommendation of the Commission was that "all countries should vigorously undertake essential national health research (ENHR)". The Council on Health Research for Development (COHRED) was established in March 1993, as a long-term mechanism to facilitate the implementation of ENHR, a strategy for organizing and managing national health research. The approach applies three principles: putting countries first, promoting equity in health and making health research an integral part of development. The strategy had been adopted by some 55 countries by the year 2000. It has successfully introduced a "horizontal" systems approach to research capacity development, which was missing in vertical programme- and discipline-based initiatives, except for the WHO Special Programmes. Unfortunately, within countries, ENHR has often been seen, or developed as, another vertical programme, to the detriment of the effective appreciation of the research system.

The second recommendation, that **international partnerships** be forged to address high priority health problems, was later echoed by the Ad Hoc Committee, and has been reflected in the explosion of public-private initiatives directed at specific problems, particularly malaria, tuberculosis and HIV. However, a review of these initiatives shows an overwhelming bias in favour of a disease/programme

focus (the vertical approach) rather than a systems (horizontal) orientation. The Commission identified a number of priority areas for research (Commission on Health Research for Development, 1990, pp 88–89) and the Ad Hoc Committee (WHO, 1996) went further in pointing to specific areas requiring priority attention. But the resulting mushrooming of vertical initiatives may have had a detrimental effect on capacity-building efforts at country level. It has been suggested that a disease/programme focus is preferred by donors because of the quick and demonstrable results. For reasons mentioned above mechanisms need to be found for linking capacity-building to vertical research activities.

Mobilization of financial resources (the third recommendation) achieved less encouraging results. A review of resource flows (GFHR, 2000) has shown that the proposed commitment of 5 % of health project aid for ENHR and capacity-building did not materialize; nor did the recommended allocation of 2 % of national health expenditures to research. Financing of health research therefore remains the greatest challenge to future development efforts.

Finally, the proposal to create an **international mechanism** “to monitor progress and to promote financial and technical support for research on health problems of developing countries” remains to be followed through. In this regard the combined efforts of the Global Forum and COHRED should make an invaluable contribution.

2.3 The unfinished agenda

Financing of health research in developing countries constitutes the most important outstanding agenda. The call to countries to undertake essential national health research has been heeded, but the recommended allocation of resources has not been achieved at national or at international levels. New mechanisms for financing research in developing countries need to be worked out. Similarly, the proposed mechanism to monitor and promote coordinated support for research on health problems of developing countries has not been established and is now more urgent than ever.

3. The developing country perspective

Ten years after the report of the Commission on Health Research for Development, it is timely to ask what has changed from the perspective of researchers based in developing countries. Are the increasing number of international players, and new forms of international research organizations, facilitating their attempts to develop an effective and responsive health research system? Do governments recognize the potentially powerful links between health research and development and are they taking the necessary steps to foster nationally relevant research in their countries? Are the necessary resources being made available, by governments and by donors?

This section is based on an extensive series of consultations in six regions, involving some 80 countries (see Annex 2). It attempts to draw out from the regional reports certain common features that characterize health research in developing countries today, while acknowledging the diversity between and within particular regions and specific countries. This analysis provides the basis for a proposed framework that could strengthen and invigorate the existing system of health research for development.

3.1 Current situation

Despite overall gains in health over the past ten years, as well as advances in knowledge, science and technology, in many instances health inequities between rich and poor, within and between countries, have widened (CEPAL, 2000; WHO, 2000). New and re-emerging diseases—HIV/AIDS, multidrug-resistant tuberculosis and malaria—have undermined gains made in many areas; accidents, injuries, mental health problems and noncommunicable diseases pose new challenges to developing countries, which are still trying to cope with longstanding challenges like high maternal and neonatal mortality rates. In the broader context, the regional reports cited rising poverty, crippling external debt, civil war, population displacements, including large refugee movements, and economic crises as factors adversely affecting health development. Additional pressures are seen as coming from economic globalization and associated trade reforms which countries are often ill-equipped to control, and which threaten to marginalize even further poor and underserved communities and countries.

In addition, each region has its own specific political and economic concerns. Africa continues to battle with the legacy of its colonial past, while the central and eastern European countries and the ex-Soviet republics are adjusting to the break-up of the Soviet Union. Many Asian countries have had to come to terms with the recent economic crisis after a number of years of prosperity; the Latin American consultation referred to rising inequities in the broader context of economic recession.

The consultations demonstrate increasing recognition by national governments that health research has the potential to help reduce many of the current inequities. However, there is a general agreement that it has not so far achieved that potential, and that the vision of the Commission on Health Research for Development has not

been realized. Disturbingly, in many cases, it has proved impossible to obtain hard data on progress in health research for development over the past decade.

Some specific regional characteristics—Latin America

In Latin America, the 1990s saw a recovery from the economic crisis that had affected the whole region in the previous decade. This recovery was reflected in the profile of science and technology, with a 57% increased investment in research and development between 1990 and 1996.

The general health situation has two prevailing characteristics: the first is rapid demographic and epidemiological transition, with declining fertility and mortality rates, and an aging population; the second is striking health inequities, reflected in morbidity and mortality profiles and in access to health care.

The capacity of the health research community to respond to this has been analysed. It was found that only 2.7% of publications from Latin American scientists deal with public health issues. An analysis of all articles published by Latin American epidemiologists revealed that 83% dealt with infectious diseases, 4% with noncommunicable diseases, and 13% with other topics. This profile reflects a pre-transitional pattern, and not the currently prevailing conditions in the region.

There is a trend towards increased funding for research in the region, particularly from the private sector and development banks. Large international pharmaceutical companies have supported clinical trials of new drug therapies. However, there are ethical concerns about the use of vulnerable groups as the experimental population, and the risks to these groups from drugs that, in the long run, they will not be able to afford.

Source: Pellegrini A (2000) *Ciencia en pro de la salud*. Washington, DC, Pan American Health Organization (Technical Publication No.578).

Some specific regional characteristics—Central and Eastern European Countries and the Newly Independent States (CEEC/NIS)

There is a strong tradition of health-related research in the CEEC/NIS region. In parallel with the dramatic socio-economic changes of the late 1980s and early 1990s, there was a drop in both research funding and research capacity in many countries. Rapid social changes, including mass unemployment and rising poverty, created new challenges, particularly in the areas of behavioural and health systems research. Many of the previous regional structures disintegrated, while new partnerships and networks were being formed.

Currently, health research is concentrated in State-run universities and academic institutions. The role of private sector and non-profit organizations is negligible, except in countries with a privatized pharmaceutical industry.

Source: CEEC/NIS Regional Consultation

3.1.1 Research environment

There is widespread agreement that health research is not sufficiently valued by national leadership as an investment in development. This is despite the recognition by numerous authorities over the past ten years that "investments in health do not divert resources from 'productive' sectors of the economy, but form part of the foundation for economic growth and development" (Harrison, 2000). This, when considered in combination with the growth of the knowledge-based economy, underlines the potential to improve health through the application and sharing of knowledge. Research that tackles the specific health problems of countries and communities can be a powerful instrument for development based on equity (Harrison, 2000). It is widely accepted that countries that have invested in relevant health research have generally fared better in terms of overall health development than those that have not.

As a result of the undervaluing of research, the environment in many low- and middle-income countries is neither conducive to nor supportive of research: there are few incentives to carry out research; researchers are poorly paid; and promotion often depends on taking on onerous administrative duties. Regional reports spoke of a lack of a "research culture". As a result, research output from developing countries, particularly in Africa, is generally low, and countries find it difficult to retain trained research personnel ("brain drain").

More broadly, there is concern at the weakening of the public research sector, and the growing dominance of the private sector, as well as at the potentially negative long-term effects of the growing emphasis on global public-private partnerships. These are seen as carrying the risk of marginalizing national researchers from priority-setting efforts and ensuing collaborations at both national and international levels.

3.1.2 Leadership and management

Scientists of many countries acknowledge that their health research system is poorly organized and managed. There is often no coherent national plan for health research, and no mechanism for obtaining a consensus on priorities. Countries have not systematically collected information on national resource flows, and have neither the capacity nor the tools to monitor them.

In their relations with external partners, it is common for researchers and research managers in developing countries to feel disadvantaged. Undeniably, there is an unequal power relationship between them and their northern partners, and this can lead to (or be perceived as leading to) imposition of projects that are not a priority for the country, a proliferation of vertical and disconnected programmes, imposed frameworks of research ethics, and little sense of "ownership" of the research by the country. The problem is exacerbated where researchers are largely or solely dependent on outside funding i.e. where national sources do not cover basic needs.

Research leaders also referred to their difficulty in coordinating the various external inputs and in ensuring that they fitted into a national research agenda. This difficulty is, in many cases, related to the lack of a transparent national resource allocation system, but is compounded by the proliferation of international organizations involved in health research, each with its own strategy and priorities, and with tensions and rivalries—real or perceived—among them. These are seen by many as producing confusion in countries and a lack of coherence in the research agenda.

3.1.3 Research capacity

The Commission on Health Research for Development identified research capacity strengthening as "one of the most powerful, cost effective and sustainable means of advancing health and development" (Commission on Health Research for Development, 1990). Since then, while there have been efforts to strengthen research capacity, at both national and international levels, they have by and large been fragmented and not sufficiently country-driven (Neufeld, 2000). Very few, if any, countries have a systematic plan for developing research capacities.

Problems in strengthening research capacity concern both numbers of people and the skills base. Many low- and middle-income countries lack a "critical mass" of researchers, with the result that the few well trained and competent individuals available are often in great demand and may be seriously over-extended. They also

tend to take on work for multinational companies or international health agencies, thus reducing still further the pool of expertise available to work on national priority areas.

As regards the skills base, a "supply side" approach has been predominant, i.e. the investments made have largely targeted the production of more scientists and enhanced capacity of research institutions. Relatively little attention has been given to generating a demand for research among policy-makers, health workers, community groups and others. In addition, most researchers receive relatively little training in leadership and management, advocacy, partnership development, priority-setting, impact assessment or communication, all of which are vital components of the research-for-development process.

3.1.4 *Research to action*

Health research is often "lost", because it not linked to or translated into policy and action. This may be because it is focused on questions that are not a priority problem or because the results are not clearly communicated to key stakeholders. Or it may be because these stakeholders have little appreciation of the potential relevance of research results for their work and their lives, and little understanding of the need for evidence-based decision-making. In the absence of such understanding, decisions may be based on uninformed opinion or political expediency. Equally, there may be little motivation and few incentives for the producers of research to invest the time and energy needed to ensure that the results of their work are applied in practice. As already noted, there tends to be little demand for research by health service managers and planners, few examples of sustained links between researchers and decision-makers, and very little operational research, programme monitoring or evaluation of impact.

3.1.5 *Financing*

The Commission on Health Research for Development noted that only about 5% of worldwide investment in research was devoted to the health problems of developing countries, which accounted for 93% of the years of potential life lost in the world (Commission on Health Research for Development, 1990). It made two specific recommendations on levels of health research financing: (1) that developing countries should invest at least 2% of national health expenditures in research and research capacity strengthening, and (2) at least 5% of project and programme aid for the health sector from development aid agencies should be earmarked for research and research capacity strengthening.

Ten years later, it is clear that these targets have not been met, although detailed information on research funding, both by national authorities and by development agencies, is lacking. In its most recent annual report (GFHR, 2000), the Global Forum for Health Research notes that still less than 10% of global spending on health research is devoted to 90% of the world's health problems. The figures it quotes are from 1992, although it seems unlikely that the proportions have changed significantly in the meantime.

Participants in the regional consultations point to a lack of global or regional financing mechanisms that are responsive to their needs. They speak of the "short-termism" of many northern funding partners, their project orientation, which produces little sustained impact, and their inappropriate demand for quick results.

Perceived tensions between different donor groupings are seen as hindering efficient financing of research.

Countries themselves generally lack information on resource flows within their borders, and have not developed in a systematic way the capacity, the mechanisms or the tools to monitor them. Countries seldom have the skills to negotiate effectively with partners to obtain extra financing for priority areas; indeed, research money in multilateral programme budgets is often severely underspent, apparently because researchers in developing countries cannot find workable channels through which to access it (M. Mugambi, 2000, personal communication).

3.1.6 *Intersectoral linkages and networking*

Weak intersectoral links at both national and international levels—between the health sector and others such as education, finance, etc.—are a continuing hindrance to effective health research. The scientific community in the North—notably the research support organizations—is seen by many in the South as having a limited and weak understanding of their situation. Development agencies in the North have generally not been successful in mobilizing support for the South from other sectors, or in getting issues relevant to the South included in the research agendas of the North.

In many countries, there is often insufficient recognition of the potential of universities and inadequate mechanisms to involve them in the overall research system. Linkages between universities in different countries are often not well developed.

3.1.7 *Information and communication*

Knowledge is a key input to, and output of, the health research system. In this respect, developing countries face a double hurdle: they often do not have easy access to much of the information generated in other countries, and they face considerable difficulties in disseminating the information they themselves generate. A recent analysis concluded that low-income countries were “nearly invisible” in the most influential journals, the author suggesting that this “may reflect the economics and biases of science publishing as much as the actual quality of Third World research” (Gibbs, 1995). Western indexing services cover some 3000 journals, of which 98% are published in developed countries (Zielinski, 1995).

Recent advances in information and communications technology, which are revolutionizing ways of working in the industrialized world, continue to bypass many of the poorer countries. In Africa, with a population of 700 million, fewer than one million had access to the Internet in 1998, and of these, 80% were in South Africa (Lown, Bukachi & Xavier, 1998). In mid-1998 (UNDP 1999), only 12% of Internet users lived in developing countries and a quarter of the world’s countries had fewer than one telephone per 100 people. Although these technologies can undoubtedly contribute to reducing gaps between rich and poor, there is an increasing fear that they may have the opposite effect—i.e. that exclusion from the “networked” economy may translate into further marginalization of poorer societies.

In many countries, the lack of available technology is secondary to a poorly developed information culture. There are few opportunities for networking or informal exchange of information, with the result that national research efforts tend to be fragmented and do not benefit from potential synergies.

4. A revitalization of health research

The problems identified above are not new. Equally, they are not all present at the same level in all countries and regions and in all international interactions. Moreover, many of them were identified by the Commission on Health Research for Development in its 1990 report. While some progress has been made in the past ten years, there is still a long way to go if health research is to benefit all countries and contribute to improved health development and reduced inequities. It is clear that some of the impetus generated by the publication of the Commission's report has since been lost, and that a renewed drive and focus are necessary to revitalize health research throughout the developing world.

Health research has tended to be isolated from the broader development community and suffers from a lack of appreciation of the tangible benefits it can bring. To counter this a reconceptualization of health research is needed, together with a new way of doing business. The Commission itself envisaged a "pluralistic, world-wide health research *system*" (*italics added*) that would nurture national scientific groups linked together in transnational networks. The proposed reconceptualization would emphasize a *systems approach* and would affirm the need to be more inclusive—research not just for and by researchers but as an *integral part of long-term health development aimed at reducing inequities*. It would apply *high ethical standards* to research initiatives and, above all, it would *focus on country priorities*.

Such an approach to health research can only function in a stable political environment. Conflict is a major cause of ill health and social disruption, and peace is a prerequisite for any meaningful progress towards human development and equity. Human development needs to be placed at the forefront of the political process, not simply as a noble humanitarian aspiration but in recognition that human capital formation is a key determinant of economic growth and development (Harrison, 2000). A persistently high burden of disease constrains economic growth and persistence of inequalities is a brake on human development. Efficient health sector spending—informed by relevant research findings—is therefore an investment rather than a consumption item for national governments (World Bank 1993).

Taking existing global economic and political realities into account, agreement by all players on a set of *underlying values* and *operating principles* for health research could greatly enhance opportunities for *better cooperation and collaboration* at all levels, and thereby lead to improved effectiveness and efficiency, and reduced overlaps and fragmentation. These values and principles should inform any discussion of the functions and structure of a health research system.

In light of these considerations, this paper articulates a vision for health research in the future, driven by equity as a fundamental concern, and focused on country needs and priorities within an interactive regional and global framework. A number of key features of the new approach deserve special mention (see below).

The vision for health research:

- driven by equity
- focused on country needs and priorities
- within an interactive regional and global framework.

4.1 Key features

- *The health research agenda has to be driven by country needs and priorities, within an interactive regional and global framework.* This requires at least two things: (1) that countries develop and retain the capacity to identify and articulate their research priorities, both internally and in international forums; and (2) that research and development agencies, funding bodies and other international players recognize the pre-eminence of country priorities, and seek ways of integrating country and regional "voices" into their decision-making processes.
- *Within low- and middle-income countries, strenuous efforts are needed to strengthen the immediate work environment of health researchers, e.g. by improving access to information, promoting a research culture and strengthening the various institutions and organizations involved in health research. Such institutions are among the fundamental building blocks of any health research system.*
- *For developing countries to make their voices heard in the international arena, they need to form strategic international networks, partnerships and alliances.* Such alliances may be formed by national or subnational bodies, and may be based on geographical location, but could also be based on commonality of interests such as vulnerability to certain health risks, socioeconomic status, institutional type, etc. They may include formal or informal networks of research groups or institutes, regional forums, alliances to combat specific diseases or health risks, etc. A more effective and substantive developing country presence in the international arena will help ensure that the global system is responsive to their needs and less prone to dysfunction.
- *If health research is to have a significant impact on health and development, it needs to be part of a long-term strategic plan closely linked to the development agenda.* This means that institutions, countries, and regional networks need to think in terms of a **health research system**, rather than a collection of projects or research councils. It also means that development and funding agencies would re-orient their own strategies, away from short-term and project-oriented support towards longer-term programme development, and infrastructure- and institution-strengthening.

4.2 Developing an effective health research system

For health research to contribute effectively to equitable development, it needs to be conducted within a system that has clearly defined goals and is based on shared values. The system needs to integrate the national, regional¹ and global levels within a common framework that is driven by an upward synthesis of country needs and priorities.

The following sections outline some of the desirable features of such a health research system, starting from the goals and underlying values that should motivate it, then considering the principles that should govern its operation and specifying the functions that the system needs to perform. The final section discusses the implications of the new approach to health research for the structure of the system, in particular at global level.

¹ The term regional is used in this document to refer to groupings of countries based on geographical location. However, many of the desirable features and functions of regional networks also apply to strategic networks and alliances of countries or institutes, based on common interests. They are therefore incorporated here in the so-called regional level.

4.2.1 *Goals of the health research system*

The prime goals of a national health research system are:

- to generate and communicate knowledge that informs the national health plan and its implementation and thus contributes, directly or indirectly, to equitable health development in the country;
- to adapt and apply knowledge generated elsewhere to national health development; and
- to contribute to the global knowledge base on issues relevant to the country.

Regional health research networks, alliances, partnerships and institutions should evolve in response to national and regional needs and should aim to:

- foster communication, cooperation and collaboration among their members;
- support their members and partners—whether countries or institutes, national, subnational or transnational—in their efforts towards the goal of equitable health development;
- identify common problems and transnational issues, and encourage development of mechanisms to address them;
- interact with other regions or networks as well as funding partners.

The global health research system should:

- actively support countries and regional and other networks/alliances in achieving their goals;
- identify problems of global significance, develop the capabilities to address them and mobilize collective action tailored to regional/national diversity.

4.2.2 *Underlying values*

For the health research system to function effectively and coherently, participating institutions need to find consensus on a shared set of values that can underlie all research efforts. The underlying values described below have emerged from the various consultations and discussions.

UV1 Equity

Equity has emerged from all the regional consultations as the most important underlying value of health research for development. Indeed, it can be argued that, in low-income countries, health research can only be justified if it contributes to more equitable health development of the population (Harrison, 2000). *Governments and international agencies are specifically called upon to make a public commitment to health equity at national, regional and global levels.* This implies a commitment to each citizen's having "equal capabilities for achieving good health outcomes, conditional on respect for human diversity and individual autonomy, and achieved through health action for the unfairly disadvantaged" (Tan-Torres Edejer, 2000). Such disadvantages may occur as a function of socioeconomic status, gender, ethnic affiliation, geographical location, or other factors.

UV2 Ethics

Health research must have an ethical basis that permeates all aspects of the process. Ethical considerations should govern the way that individuals are treated as well as

providing a framework for institutional and other collaborative arrangements. This involves the unrelenting promotion of human values and the dignity of the individual, engagement of the communities involved, respect for the sociocultural norms of local societies, arrangements that ensure a fair flow of benefits in all North-South partnerships, and the right of everyone to enjoy the benefits of research.

UV3 Ownership

All stakeholders in the research process should have the right to participate at all stages, and should have access to the outcomes of the research.

UV4 Self-determination

The need for countries to determine their own priorities and research agendas, while acknowledging a global interdependence, was stressed in every regional consultation. Researchers and research managers spoke of a need for greater national **self-determination** and **self-reliance**. Development partners should respect this and support local efforts rather than seeking to impose their own agendas.

UV5 Solidarity

Countries and research institutions in the South can achieve much more by working together than separately. Diversity (of socioeconomic status, language, culture, etc.) should not be perceived as a threat to such solidarity. Rather, solidarity can incorporate and build on diversity if all parties are working on the basis of agreed values and principles. There is a specific need to ensure that the least developed countries are not excluded from the research process but rather receive increased support.

UV6 Development and empowerment

Human development needs to be in the forefront of the political process. Research should not be seen only as a means of producing knowledge but as part of a process of human development and individual empowerment.

UV7 Health research as an investment

Health research is an investment in development and should not be viewed simply as an item of expenditure or consumption. There is a need to develop a "research culture", which recognizes the value of research and of researchers and allows the emergence of a supportive environment.

UV8 Intersectorality

Health research is not synonymous with biomedical research; it has a much broader disciplinary base and needs to encompass a range of actors across a variety of sectors, such as agriculture, finance, education, etc.

UV9 Partnerships

If health research is to respond effectively to the needs of communities, it must involve decision-makers, researchers, users and beneficiaries of research results in

close partnerships—nationally and internationally—at all stages of the research process, from planning and priority-setting to utilization of findings. In building partnerships, efforts are needed to include marginalized groups.

UV10 Accountability

If it is accepted that health research should contribute to equitable health development, then this is a critical benchmark against which its success or failure should be judged. Researchers, managers, and policy- and decision-makers at all levels are ultimately accountable to their immediate and wider communities for the ways in which resources for research are used, and the results of research translated into action. By extension, organizations and institutions at the global level should be accountable for the decisions and actions that they take.

4.2.3 Operating principles

The underlying values for a health research system lead to, and can be given effect through, a series of operating principles, relevant to all levels, from institutional to global.

1. Health research policy and priorities

It is vital that each country has a clear national research policy and agenda, with identified priorities, based on considerations of equity, and determined in consultation with all stakeholders. The agenda should reflect national and subnational needs, and should focus on priorities likely to optimize health benefits. Community involvement in the process is essential, particularly in problem identification, priority-setting, and implementation of results. There is thus a need to strengthen the “demand” for health research by making the processes more explicit and fostering the involvement of all parties concerned, including communities, policy makers, government services, media, industry, etc.

At global level, there is clear justification for a stronger developing country voice in research priority-setting, and associated decisions about resource allocation.

2. National health research plan

The national health research plan should recognize the importance of producing concrete health benefits, and should develop the human, institutional and financial resources to be able to do so; research proposals should be evaluated from that perspective. Projects supported by or developed in partnership with external agencies or institutes should be consistent with the national plan.

3. Targeted financing

National and international resources should be mobilized and allocated along the lines of national priorities with particular attention to considerations of equity. Resource flows within a country should be under the control (wholly or in partnership) of national leadership. International collaborative efforts should respect and support the national priorities.

4. Monitoring and evaluation

To ensure that resources are used efficiently and in line with agreed priorities, there is a need for continuous monitoring and evaluation. All national and international bodies funding health research should develop explicit policies and procedures for reviewing proposals, and for monitoring and evaluating the outputs and impact of those that are funded. Countries need to develop indicators to monitor the development and effectiveness of the health research system. On a broader front, countries also need to define valid indicators of health status, health system effectiveness, efficiency and affordability, in order to try to capture the contribution of research to reducing inequities.

5. Integration with health development

If health research is to have an impact on health development, the problems it tackles and the findings emerging have to be conceptualized within that context. Equally, decision-making needs to be informed by a sound knowledge base. Close links are therefore needed between the health research community, the broader health system and the development community. Health workers at district level are often ideally placed to carry out local research, and should be encouraged and empowered to do so.

6. Multidisciplinarity and intersectorality

Health research needs to be organized as a multidisciplinary and intersectoral activity; broad social objectives could be used as an entry-point for promoting such research.

7. Long-term perspective

The past ten years have amply demonstrated that there are no "quick fixes" in building an efficient and responsive health research system. Short-term project funding may be wasted if the underlying infrastructure is weak. Investing in health research is a long-term engagement and must include strengthening the capacity of institutions so that they can make the most effective use of resources.

8. Ethical operation

All research should be based on clear ethical principles, covering treatment of individual subjects, respect for communities, and institutional and other collaborative arrangements. Countries and institutions need to develop clear guidelines and capable ethical review mechanisms able to appraise and contribute to oversight of all research projects in which they are involved. The ethical base should embody the principles of human dignity, human rights, justice and fairness. Equity should be an overriding concern, in various aspects such as gender, ethnicity and socio-economic group. At the same time, the specific situation in the country needs to be considered.

International collaborative research should also be based on an accepted code of ethical practice that reflects the realities and concerns of the countries where the research is carried out. It is important that the unequal power relationships in research collaborations involving developed and developing countries be counterbalanced by the negotiation of appropriate arrangements regarding, for example, data access, authorship rights, financial benefits and rights to intellectual property re-

sulting from collaborative efforts. Such collaborations should also explicitly address issues such as responsibilities towards strengthening of local institutions and health services, and providing benefit to local communities.

9. Communication and networking

There are enormous benefits to be gained from building collaborative networks and alliances, and by improving communications among the various players in the health research system. Thus researchers need to communicate far more effectively among themselves and with other stakeholders. Institutions can support and reinforce each other's efforts through exchange of resources and personnel, and by working together towards mutually agreed goals. Developing countries can collaborate in regional groupings to tackle common problems and to lobby for their interests with global partners. To facilitate this, the new information and communications technologies need to become widely available and used in the developing world, and made accessible to a broad range of users; equally there is a need for a new understanding of the importance and value of information management and knowledge-sharing—an understanding which is central to participation in the global process of knowledge generation and exchange.

10. Principle of subsidiarity

Regional or other groups and global organizations should undertake only those activities that cannot be carried out effectively at the country or institutional level. Thus, global organizations should support countries and regions in their functions and should not seek to supplant them. This will promote capacity development and will help to counter the "brain drain" by providing expanded opportunities for researchers and research managers at country level.

4.2.4 Functions

There are five primary functions of a health research system: stewardship, financing, knowledge generation, utilization and management of knowledge, and research

capacity development. Each of these functions implies a need for a range of activities at the country, regional and global level. While activities at these levels should constructively reinforce each other, country activities should be primary; regional and global mechanisms should undertake only those activities that cannot be efficiently carried out at country level (subsidiarity principle).

The five primary functions of a health research system are:

- stewardship
- financing
- knowledge generation
- utilization and management of knowledge
- capacity development.

Along the lines argued for international health organizations (Jamison, Frenk & Knaul, 1998; Frenk et al., 1997), research institutions with a regional, international or global mandate should balance their core business (research activity that is transnational and focused on pro-

motion of public goods) with supportive activities (aimed primarily at strengthening national research systems). Regional research organizations may prove particularly important with respect to such supportive activities (such as facilitating developmental partnerships between weaker and stronger institutions in neighbouring countries, or targeting particular capacity needs).

Stewardship

This function encompasses a range of activities intended to ensure that the health research system demonstrates quality leadership, is productive, has strategic direction and operates in a coherent manner rather than as a collection of fragmented and uncoordinated activities. It should aim at creating or promoting a "research culture", that recognizes the need for evidence-based decision-making and the importance of health research as a vital component of health development. In this way, it has a fundamental influence on all the other functions, since it establishes the framework for their implementation.

Stewardship can be divided into a number of distinct subfunctions. These include: strategic vision; overall system design and policy formulation; priority-setting; performance and impact assessment; promotion and advocacy; and setting of norms, standards and ethical frameworks ("sound practice") for the conduct of research.

Specific activities

At country level, this function will include the development of national health research policy, translating it into a national plan and priorities, and overseeing its implementation. In line with the operating principles, the policy development and priority-setting exercises should involve all stakeholders—researchers, policy-makers and users of research—in a broad consultative process. Special efforts are needed to include under-represented groups, e.g. the poor, women, and ethnic minorities, in the consultation process. The plan itself should specify goals, targets, and indicators of progress.

This function also includes improving links and coordination between the initiatives of various groups, such as universities and research institutions, different levels of the ministry of health, nongovernmental organizations and other civil society groups, and the private sector; similarly, of external partners, fostering relationships based on equitable partnerships and respect for national autonomy. Advocacy and collaboration with other sectors, including finance, education, agriculture, welfare and security, are also part of the general stewardship role.

Fundamental to this whole process is the creation of a supportive environment that fosters dialogue and networking among the various stakeholders, creates synergies and builds confidence and trust. The system should provide incentives for research, for example by shifting or extending university promotion criteria from administration to research, and should seek to balance current emphasis on basic and clinical sciences with the unmet need for public health research.

In partnership with stakeholders, governments should facilitate the setting of national regulations and standards relevant to the various aspects of health research. Such standards should be based on international guidelines, but will need to take account of the local culture and situation.

Finally, an essential element of stewardship is assessment of the performance and cost-effectiveness of the system in achieving its goals.

At regional level, promotion of active networking, inter-country and inter-institutional collaboration and cooperative action, both in support of country activities and in specific regional initiatives (ranging from transnational disease surveillance to stimulating attention to regional research or capacity-building priorities, to coordinated responses to national or regional crises), is an important aspect of this function. Through regional forums, political and opinion leaders can be sensitized

to the value of health research. Regional (or subregional) networks also have an important role in liaising and lobbying with the global level and with other partners for safeguarding of national and regional interests as well as for protection of vulnerable groups, e.g. refugees.

At global level, this function translates into activities that facilitate interaction (a) between countries and regions, (b) between country, regional and global levels, and (c) within the global arena, and that ensure coherence of the research agendas, with identification of critical gaps at the different levels. A specific responsibility is to ensure that global priorities are adequately informed by country needs, and that there is an effective multidirectional flow of information and data. Donors in particular have a special responsibility not to make the countries' and regions' stewardship task more difficult by acting in a way that could be construed as quasi-autonomous and unaccountable (WHO, 2000).

The global level has traditionally played the key role in establishing or harmonizing regulations and scientific, technical, and ethical norms and standards. The perspective of the regional consultations is that this process has generally reflected prevailing attitudes and conditions in developed countries. More attention should now be given to the need for such standards to be adapted to particular national situations, and for increasing the capacity of less powerful partners to engage and negotiate equitable benefit-sharing agreements.

Financing

Financing of health research comes from a number of sources. If the resources available are to be used effectively and efficiently, consistent with research priorities, mechanisms are needed to ensure coordination and to monitor resource flows over time, both within and between levels.

Specific activities

At country level, funds should be allocated in ways that are generally consistent with national priorities. External partners need to be aware of those priorities, while a national capability to monitor where and how research funds are being spent, and the quantities involved, is essential. Countries should aim to meet the recommendation of the Commission on Health Research for Development of investing at least 2% of national health expenditures in research and research capacity strengthening.

The regional level should mobilize resources for specific regional initiatives, in line with priorities agreed collectively by the countries or institutions involved. It should also provide a link between countries and/or institutions and external partners, building coalitions and brokering for financial support. There may be considerable opportunity to strengthen North-South institutional collaboration, with resulting scaling-up of human and financial investments.

The global level should continue to mobilize resources, both in support of health research in developing countries and regions and for collective global action. An expanded capacity to monitor resource flows is essential and overdue.

Knowledge generation

Each country needs to be able to generate knowledge relevant to its own situation, to allow it to determine its particular health problems, appraise the measures avail-

able for dealing with them, and choose the actions likely to produce the greatest improvement in health. This should not be seen as the exclusive preserve of universities or research councils, but equally of health/public services, nongovernmental organizations, etc.

Regions should focus on analysing common problems, following and reporting on trends, evaluating regional progress and informing regional strategies and interventions. Core functions at global level should focus on (a) presenting a balanced overview of global health status and its determinants, (b) identifying and analysing global/international health problems, (c) catalysing action on outstanding issues requiring a global response (e.g. burden of disease estimates, poverty, global health threats), and (d) developing and disseminating new techniques, methodologies and approaches.

Utilization and management of knowledge

Generation of new knowledge is only a part of the research process; for knowledge to be useful, it should be shared with other researchers and communicated, in suitable format, to the different users/stakeholders. It needs to be translated into policy or action or absorbed into the existing knowledge/technology base. Low-income countries, in particular, need to ensure that health research brings tangible benefits to the health status of their people. This implies a need for strengthened links between researchers, policy-makers, health and development workers, nongovernmental organizations and communities. A critical aspect is the need to improve interactions and connectedness, both horizontally and vertically, through accelerated and creative use of new information technologies.

Specific activities

At country level, activities include:

- promoting an "information culture", which recognizes the importance of producing, sharing and using knowledge;
- constructing closer links and improved interactions between the research community, health services and policy-makers;
- fostering communication within the research community, as well as between researchers and other stakeholders, including the technology development community;
- ensuring that research results are retrievable by other researchers and other interested parties;
- generating a demand for research among policy-makers, practitioners, communities and other interested groups by fostering an appreciation of the importance of evidence-based decision-making;
- converting research results into user-friendly end-products;
- promoting use of information and communication technologies;
- developing databases of national experts, at home and abroad.

At regional level, core activities include collating and disseminating useful information, e.g. on training available in the region or in international alliances/networks, researchers active in priority areas, work under way, and country or institutional experiences. Regional and other networks can play a vital role by collating and making available research results and creating mechanisms and opportunities for the sharing of information with health service leadership and other sectors.

At global level, core activities need to focus on gathering and disseminating research results—from country, regional or global studies—that have major implications for policy and practice. The global level should actively promote the idea of knowledge as a global public good rather than a saleable commodity and forge links in support of this with the private sector. Poorer countries and regions will need targeted support to ensure that they have access to the global knowledge base.

Capacity development

A long-term, systems approach to the development and maintenance of research capacity is needed, addressing such issues as the depth and range of research competencies, gender disparities in education and training, institutional mix and capability, and the fostering of sustained collaborations, along with clear plans that include provision for monitoring and evaluation. Efforts need to focus on both the quantity and quality of skills available, not just in research techniques, but over a broad range of related areas, including:

- research priority-setting;
- multidisciplinary research, including skills of management and leadership in this field;
- capacity for use of research, i.e. development of the demand side of the research process;
- leadership and management;
- policy and systems analysis;
- communication of results to a range of interested audiences through various media (publications, forums, mass media, Internet);
- development of partnerships;
- innovative uses of information and communication technologies.

Clearly, a situation analysis together with a phased and realistic plan is needed; the intention is not to overwhelm country leaders, but to provide pointers towards constructive and sustained capacity development.

Specific activities

At country level, strengthening the **supply** side of the health research system needs renewed attention, addressing the range of areas listed above, and with particular emphasis on the development of institutions and their interconnections. At the same time, concerted efforts are needed to strengthen the **demand** side—to raise the awareness of public officials, the media, industry, community groups and other potential users about the opportunities for benefiting from new knowledge. To be effective, strategies should focus simultaneously on senior management and institutional leadership, and on health care providers and practitioners.

The regional level and other appropriate networks can support countries by developing tools and methodologies aimed at improving the capacities of different target groups. They should facilitate contacts between countries or institutions, with respect to collaborative programmes, training opportunities and exchange of expertise. The region should also mobilize resources for region-based capacity-development activities.

Actors at *the global level* also carry responsibility for developing tools and methodologies in key areas, such as stewardship and senior-level research management, that can be applied or adapted by countries and regions. They should facilitate

The Latin American School of Social Sciences (FLACSO)

An example of a regional organization for the development of a scientific field is FLACSO, the Latin American School of Social Sciences. It is an autonomous and regional international agency, created in 1957 under the auspices of UNESCO and some governments from the Region. Its main objective is the promotion of social sciences in Latin America and the Caribbean.

Fourteen Latin American and Caribbean countries are members, and it works simultaneously in 10 "academic units" in Argentina, Brazil, Costa Rica, Chile, Ecuador, Guatemala, Mexico, Cuba, El Salvador, and the Dominican Republic. Activities include teaching, research, dissemination, academic extension and technical cooperation. Students and faculty are international, and the different academic units profit from the collective wealth of different specializations and knowledge.

More than 2500 people have graduated from FLACSO's programmes in the past 40 years. It currently offers 2 PhD courses, 26 Masters degrees and 13 postgraduate courses.

FLACSO is governed by a General Assembly in which all Member States participate, a Superior Council which meets once a year, and a Directive Committee formed by the Secretary General and the Directors of Academic Units, which meets twice a year.

contacts between countries and external institutions, with regard to training opportunities and exchange of expertise. As a core function, there is a need to develop greater capacity to anticipate and respond to health crises wherever they occur, and to effectively diffuse the lessons learnt.

4.2.5 Structure

To give effect to the research system described in the preceding sections, it is clear that more extensive and better cooperation will be needed between national, regional and global institutions and organizations. The existing structures at all levels will need to be examined with a view to determining whether they have the capabilities to carry out the functions specified in section 4.2.4 above.

Countries—both individually and in regional groupings—may choose to reorient existing structures, support systems and networks, or to develop new entities to support health research for development in the revitalized system. While these decisions will necessarily be country- or region-specific, there are a number of principles that can be borne in mind. These include the need for structures to be non-bureaucratic, decentralized, and inclusive; to avoid artificial institutional or disciplinary boundaries and restrictive networks, and to respect the values and principles articulated in sections 4.2.2 and 4.2.3.

In addition, it is clear that, *in reorienting their structures for an effective national health research system, countries should focus on developing and strengthening the essential functions*: stewardship; financing; knowledge generation; utilization and management of knowledge; and capacity development. The description of functions in section 4.2.4 included a number of activities to be undertaken, which are in the first place country-specific.

However, it is the reality that countries have to implement these activities in a regional and global environment. Until now, this external environment has been fixed and has largely determined the country reality; it could be argued that the time has come for this to change. This means that whatever is constructed as the regional and global dimensions of the health research scene should be guided by

the same characteristics or criteria as at national level, in full respect of the principle of subsidiarity.

In view of the specificity of national and regional arrangements, the discussion below focuses on the architecture of the global health research system. It should be noted, however, that the reports of the regional consultations contain a number of suggestions and innovative ideas on organizational architecture at regional level. Finally, it is worth reiterating that any reorganization of the regional or global architecture should be based on the need to provide greater support to countries.

Characteristics of an effective global architecture

At the global level, pluralism in the health research scene has mushroomed in response to the increasing complexities of health problems and their determinants. This has been compounded by the rapid advances in science and technology (Chen et al., 1999; Frenk et al., 1997). Section 2.1 described 10 groups of players in the global health research scene (see Fig. 1). Over 120 health research bodies have been identified worldwide, and many have been linked in a worldwide database for information exchange (SHARED, 2000).

Recognizing that science has significant potential to contribute to reducing diseases of poverty and promoting health, new forms of health research funding have emerged. These include global health research initiatives linked to sources such as new philanthropic foundations (e.g. the Bill & Melinda Gates Foundation (McCarthy, 2000)), and global public-private partnerships between development sector health researchers and the pharmaceutical industry, foundations and UN organizations (Buse & Walt, 2000a, 2000b).

To mount a coherent and effective strategy in pursuit of the goals and targets for health research in the 21st century, the burgeoning pluralism must be modulated by enhanced coordination and collective decision-making and action. In various consultations with countries, regions and funding agencies, the politics and lack of coordination that pervade the international health research system have been consistently cited as obstacles to effective and efficient health research governance at all levels.

It is imperative that the evolving architecture of the international health research system be built on a solid foundation, that includes:

- a shared vision for health research as articulated in section 4;
- a renewed commitment to a set of achievable goals (section 4.2.1);
- agreement on the underlying values and operating principles of the health research system (sections 4.2.2 and 4.2.3);
- a strengthened capacity of all stakeholders to contribute, but in particular the developing countries and regional networks that primarily comprise the "doers" and "beneficiaries" of health research.

Specifically, *the structure of the health research system must be considered in terms of its ability to fulfil the functions outlined in section 4.2.4.*

A number of options can be considered as constructive modifications to the current structure of the global health research system. Some of these are described briefly

Governance can be broadly defined as the means by which a society steers itself towards achieving agreed goals (Lee, 2000a).

Health research governance concerns the actions and means adopted by a society to organize itself in conducting research that contributes to the promotion and protection of the health of the population

in Annex 1; clearly, however, this is only a "first pass", and these and related options require substantial further development with the full participation of all stakeholders.

The extent to which any proposed new structures—or indeed the existing structures—might be expected to contribute to the identified vision and goals can be assessed against a set of **criteria** or **characteristics** of an ideal system.

1. **Robustness.** The structure of the system as a whole should advance health research for development at all levels—institutional, national, regional, international and global. In pursuit of the goal of equity in health research, it is essential that the structure be comprehensive in its attention to all organizational levels at which research is conducted, managed and applied.
2. **Competence and effectiveness.** The structure should allow the formulation of a coherent strategy for achieving reasonable scientific goals. Long-term quality assurance can be pursued through such means as the creation of a highly competent **working** Technical Advisory Council, and effective external review processes, for which many precedents exist.

The structure should be evaluated in terms of the degree to which it can effectively carry out the functions of stewardship, financing, knowledge generation, utilization and management of knowledge, and capacity development.

Competence and effectiveness can be assured, over the long run, by the use of such techniques as:

- best governance practices gleaned from the experience of others and adapted to the needs of this very special undertaking, and
- generally accepted financial audit processes.

3. **Credibility and accountability with multiple stakeholders.** It is essential for the many interested parties to have faith in the structure. It will be essential that all parties believe that any **new** structure will provide **increased support** for the achievement of goals, not only in science, but also in equity, cost-effectiveness, management and governance. The extent to which these expectations are being met should be monitored over time.

To build such credibility, the structure will have to function in such a way that it:

- demonstrates sensitivity and responsiveness to concerns at many levels of the research system, e.g., as expressed through the six regional consultations;
- holds forth the promise of equity, not only between North and South, but also among the various relevant entities in the developing world, institutional, national and regional;
- demonstrates the feasibility of achieving economy and efficiency in the administration of the total enterprise;
- shows fiscal responsibility and accountability in terms of both quality of research and finances; and
- provides a high standard of stewardship as expressed through governance.

4. **Ability to champion health research for development.** The structure should be able to advocate effectively for health research for development.

As such, it will have to:

- effectively articulate the significance of health research for development; and
- cultivate an understanding of that significance in the consciousness of the

broader general public, so that over time public support for the effort will increase significantly.

5. **Credibility and ability to generate research funding.** The structure should provide for the development of new techniques and approaches for attracting funds for health research for development. The structure will need to both cultivate and mobilize new sources of funding, as well as increase the yield from more traditional sources of support.
6. **Support national, regional and international entities in their organizational effectiveness.** The structure should support effective health research management and governance processes at all levels. It must be able to support institutional, national and regional entities in developing responsible management and governance practices, including finance and human resources development.
7. **Appropriate governance and good practice.** The structure should foster and encourage good governance. Boards and related accountability/oversight bodies created within the structure must be working entities capable of presiding over effective strategic planning and exercising stewardship on behalf of legitimate constituents. To this end, it will be critical that boards be composed of a balanced mix of individuals chosen on their merits in accordance with target skill sets. Directors and trustees must be able to contribute independent and varied external viewpoints and must adhere to strict ethical guidelines, e.g. concerning avoidance of real or perceived conflict of interest.
8. **Cost-effectiveness.** The returns that can be expected from the investment required to establish and operate new or modified structures should be considered. Any new structure should hold the promise of increased yield in research productivity and financing, for each unit of expenditure on management and governance, as well as in meeting the broader goals of health research for development.

5. Key challenges

The consultations and analyses that informed this report identified a number of shortcomings in the current state and organization of health research, as well as outlining a vision—in some detail—for a health research system that would address some of these shortcomings. It is intended that the International Conference on Health Research for Development will contribute to the further development of that vision, and will produce a “framework for action” for the coming years that will specify concrete targets, together with timeframes, relevant actors and where appropriate associated costs.

As a basis for the discussions in Bangkok, we have highlighted certain key challenges, extracted from the discussion paper, for consideration by Conference participants. For each challenge, a number of questions are posed, which may be used as the starting-point in elaborating the specific actions that need to be taken to address the challenge. Each question should be considered in terms of its relevance for action at country, regional and global levels.

The challenges are grouped in four broad categories. The first three—values, sustainable health research systems, and research environment—relate to specific aspects of the revitalized system envisaged in section 4. The final challenge—knowledge production and its application—is an overarching concern that should inform all our efforts.

5.1 Values

5.1.1 Equity

● In health

The poor and marginalized people of the world continue to bear a disproportionately large—and in many cases increasing—share of the global burden of disease. The benefits of health knowledge must be made available to them to give them choices and hope for the future. This is the fundamental challenge of all health research for development and should underpin actions to strengthen the health research system.

How can health research contribute more to reducing inequities in health between and within countries?

How can the national health research system be integrated with the national health development plan?

How can national governments strengthen these processes?

● In health research

There are continuing inequities between the health research systems of developed and developing countries both in terms of the resources available (human, financial, infrastructure) and in terms of capacity to engage, interact and influence

action at international and global levels. The challenge here is to ensure that research systems in developing countries have access to the resources they need to address their priority problems and to interact meaningfully on the global stage.

How can developing countries more effectively make their voices heard in the global arena?

Where should the health system at the different levels focus its attention in order to foster a more equitable distribution of resources for research?

5.1.2 *Ethics*

Health research at both national and international levels should be guided by clear ethical principles, based on respect for the dignity of the individual and for the sociocultural norms, engagement of the communities involved, and the right of everyone to enjoy the benefits of research.

What mechanisms and actions are needed at national level to ensure that research projects and programmes are in conformity with established ethical guidelines on treatment of individuals?

What actions are needed at national and international levels to ensure that international collaborative research reflects the realities and concerns of the countries where the research is carried out?

What should be done to ensure that international research collaborations (a) include appropriate arrangements regarding, e.g. data access, authorship rights, financial benefits and rights to intellectual property, and (b) explicitly address issues such as strengthening of local institutions and health services and providing benefit to local communities.

5.2 Sustainable health research systems

5.2.1 *Governance*

Broadly speaking, governance is the means by which a society steers itself towards agreed goals (Lee, 2000a). With regard to health research, governance can be understood as the formal and informal institutions, organizations and pressure groups, at national, regional, or international level, whose actions have a bearing on any aspect of the health research system. At the level of organizations and institutions, governance is the process through which those with ultimate responsibility for the organization exercise the function of stewardship, as defined in section 4.2.4.

Effective co-ordination among organizations at various levels of the health research system can be facilitated through effective contacts at the governance level. Such coordination, leading to collective action where appropriate and avoiding the simple addition of bureaucratic layers, represents a significant challenge for the future.

How can the existing vertical international initiatives and programmes be integrated into a coherent global health research system that supports countries?

What actions would improve communications between country, regional and global levels, and what role would governance play in such contacts?

How can regional structures be strengthened to allow them to interact most effectively with both national and global levels? And how can the governing bodies of institutions at each level facilitate such interaction?

What, if any, changes are needed to the global structure to improve support to countries and regions in their health research efforts?

How can the growing institutional pluralism be captured to the benefit of global governance arrangements?

5.2.2 *Capacity development*

The development and retention of an adequate research capacity continues to present a major challenge to developing countries. There is a need for a comprehensive, sustainable approach to strengthening capacity, addressing both the quantity and quality of skills available, over a broad range of research-related areas, including leadership, priority-setting, advocacy, networking, negotiation, communication, use of research and partnership development.

How can developing countries attain a "critical mass" of researchers?

How can developing countries retain a critical mass of researchers?

What are reasonable time-frames for this?

How can a demand for research be generated among policy-makers, health workers, community groups and others?

What can regional and international organizations, and well functioning established institutions such as certain northern universities, do to support countries and regions in their capacity development efforts?

5.2.3 *Financing*

The disequilibrium in allocation of health research funds identified by the Commission on Health Research for Development remains a key challenge for the coming years. Despite the recent injections of funds from philanthropic foundations and public-private partnerships, both the absolute amounts available for research and their distribution remain unsatisfactory.

What specific targets can be set for financing of health research, and what actions can help to ensure that those targets are met?

What specific actions can countries, regions and international organizations take to further redress the 10/90 disequilibrium?

How can global and regional financing mechanisms be more responsive to country needs?

What new tools or methodologies are needed to allow countries to coordinate inputs and monitor resource flows?

Are new mechanisms needed to strengthen the monitoring of resource flows?

5.2.4 *Knowledge management*

Knowledge is a key input to, and output of, the health research system. The challenge is to ensure that all countries have access to, can distil and use, and can contribute to the knowledge base.

What specific actions can be taken at national, regional and global levels to increase the access of developing countries to the international health research literature and knowledge base, both as contributors and as users?

How can we ensure that poor countries have adequate access to the new information technologies, and are not further marginalized by the communications revolution?

How can we ensure closer links between the research community, health services and policy-makers, in order to facilitate the utilization of research results in practice and policy?

5.3 Research environment

5.3.1 *Intersectorality*

In line with increasing evidence of the importance of health and health research in development, the health research community needs to be much more closely linked to the development community. This implies a need for closer involvement with a number of other sectors—finance, welfare, education, agriculture, etc. The challenge is to create purpose-specific, equity-oriented research, learning and action coalitions, and manage them in an effective way.

How can the barriers between sectors—cultural, linguistic, and other—be broken down?

What specific actions could sensitize other sectors to the relevance of health research for their activities?

5.3.2 *Globalization*

Globalization is seen by some as an essentially progressive force driven by high technology and economic liberalization, bringing benefits to all. For others, it is “unfettered capitalism” threatening to increase marginalization of the poor and undermine health for all (Lee, 2000b). The challenge is to find ways of enabling all countries to identify and use the opportunities offered by globalization and at the same time to limit the harmful effects.

What aspects of globalization can contribute positively to the functioning of the health research system?

How can countries take advantage of globalization to form effective international partnerships?

How can globalization be harnessed to improve health equity?

What specific actions can help to protect developing countries from the harmful effects of globalization?

5.3.3 *Culture*

There is widespread agreement that health research is not sufficiently valued by many societies as a critical input to human and socioeconomic development. The result is often an environment that is neither conducive to, nor supportive of, research. The challenge is, therefore, for each country to develop a culture that recognizes the value of research and of researchers, creates a sense of “ownership” of research by the community, and facilitates the emergence of a supportive research environment.

How can policy-makers, communities, etc. be more rapidly sensitized to the value of health research in development?

What specific actions would create a more supportive environment for research?

What is the role of national governments in promoting a research culture?

What is the role of regional, international and global bodies in promoting a research culture at national level?

5.4 Knowledge production and application

The production of knowledge is the primary function of the health research system. While the global body of knowledge related to the major health and development problems of the world continues to grow, there remain significant gaps, both in the underlying knowledge base, and in understanding of how existing knowledge can be applied to the problems of the vulnerable and marginalized. The challenge is to ensure that the effort leads to knowledge of high quality that is relevant to the overarching goal of equity.

How can the gaps in health knowledge be identified, prioritized and addressed?

How can the interface between priority-setting at global level and country priority needs be optimized?

How can local needs be better taken into account in country-based research?

How can scientists in poor countries be enabled to participate more effectively at global level?

References

- Buse K, Walt G (2000a) Global public-private partnerships: part I—a new development in health? *Bulletin of the World Health Organization*, 78(4): 549–561.
- Buse K, Walt G (2000b) Global public-private partnerships: part II—what are the health issues for global governance? *Bulletin of the World Health Organization*, 78(5): 699–709.
- CEPAL (2000) *Panorama social de América Latina*. Santiago de Chile.
- Chen LC, Evans TG, Cash RA (1999) Health as a global public good. In: Kaul I, Grunberg I, Stern MA, eds. *Global public goods: international cooperation in the 21st century*. New York, United Nations Development Programme: 284–304.
- COHRED (1993) *International Conference on Health Research for Development: report*. Geneva, Council on Health Research for Development.
- Commission on Health Research for Development (1990) *Health research: essential link to equity in development*. Oxford, Oxford University Press.
- Frenk J et al. (1997) The new world order and international health. *British medical journal*, 314: 1404–1407.
- GFHR (2000) *The 10/90 report on health research 2000*. Geneva, Global Forum for Health Research.
- Gibbs WW (1995) Lost science in the Third World. *Scientific American*, August: 92–99.
- Hancock T (1998) Caveat partner: reflections on partnership with the private sector. *Health promotion international*, 13(3): 193–195.
- Harrison D (2000) Health research: an essential tool for achieving development through equity. In: Neufeld V, Johnson N, eds. *Forging links for health: perspectives from the Council on Health Research for Development*. Ottawa, International Development Research Centre.
- Jamison D, Frenk J, Knaul F (1998) International collective action in health: objectives, functions, and rationale. *Lancet*, 351:514–517.
- Lee K (2000a) *Globalisation, human development and health governance: the implications for U.K. policy*. Background paper for the U.K. White Paper on Globalisation and Human Development.
- Lee K (2000b) Globalisation—a new agenda for health? In: McKee M, Garner P, Stott R, *International co-operation and health*. Oxford, Oxford University Press (forthcoming).
- Lown B, Bukachi F, Xavier R (1998) Health information in the developing world. *Lancet*, 352S2: 34–38SII.
- McCarthy M (2000) A conversation with the leaders of the Gates Foundation's Global Health Program: Gordon Perkin and William Foege. *Lancet*, 356:153–155.
- Neufeld V (2000) Fostering a national capacity for equity-oriented health research. In: Neufeld V, Johnson N, eds. *Forging links for health research: perspectives from the Council on Health Research for Development*. Ottawa, International Development Research Centre.

- SHARED (2000) Scientists for Health and Research for Development. <http://www.shared.de>
- Tan-Torres Edejer T (2000) Health for some: health, poverty and equity at the close of the century. In: Neufeld V, Johnson N, eds. *Forging links for health: perspectives from the Council on Health Research for Development*. Ottawa, International Development Research Centre.
- TFHRD (1991) *Essential National Health Research: a strategy for action in health and human development*. Geneva, Task Force on Health Research for Development.
- UNDP (1999) *Human development report 1999*. New York, Oxford University Press for the United Nations Development Programme.
- WHO (1989) *Constitution of the World Health Organization*. Geneva, World Health Organization.
- WHO (1996) *Investing in health research and development: report of the Ad Hoc Committee on Health Research Relating to Future Intervention Options*. Geneva, World Health Organization (unpublished document TDR/Gen/96.1).
- WHO (1999) *The World Health Report 1999. Making a difference*. Geneva, World Health Organization.
- WHO (2000) *The World Health Report 2000. Health systems: improving performance*. Geneva, World Health Organization.
- World Bank (1993) *World Development Report: Investing in health*. Oxford, Oxford University Press.
- Zielinski C (1995) New equities of information in an electronic age. *British medical journal*, 1480-1481.

Reports of regional consultations

Africa

Health research in Africa: past experiences and perspectives for the future.

Asia

Asia Forum for Health Research—a progress report.

Central and Eastern European Countries and Newly Independent States

Regional Consultation on Health Research and Policy Development in Central and Eastern Europe and the Newly Independent States

Latin America

Latin American Regional Consultative Meeting

Caribbean

Report of the Retreat on the Caribbean Health Research Agenda

Eastern Mediterranean

Eastern Mediterranean Regional Consultation on Health Research for Development

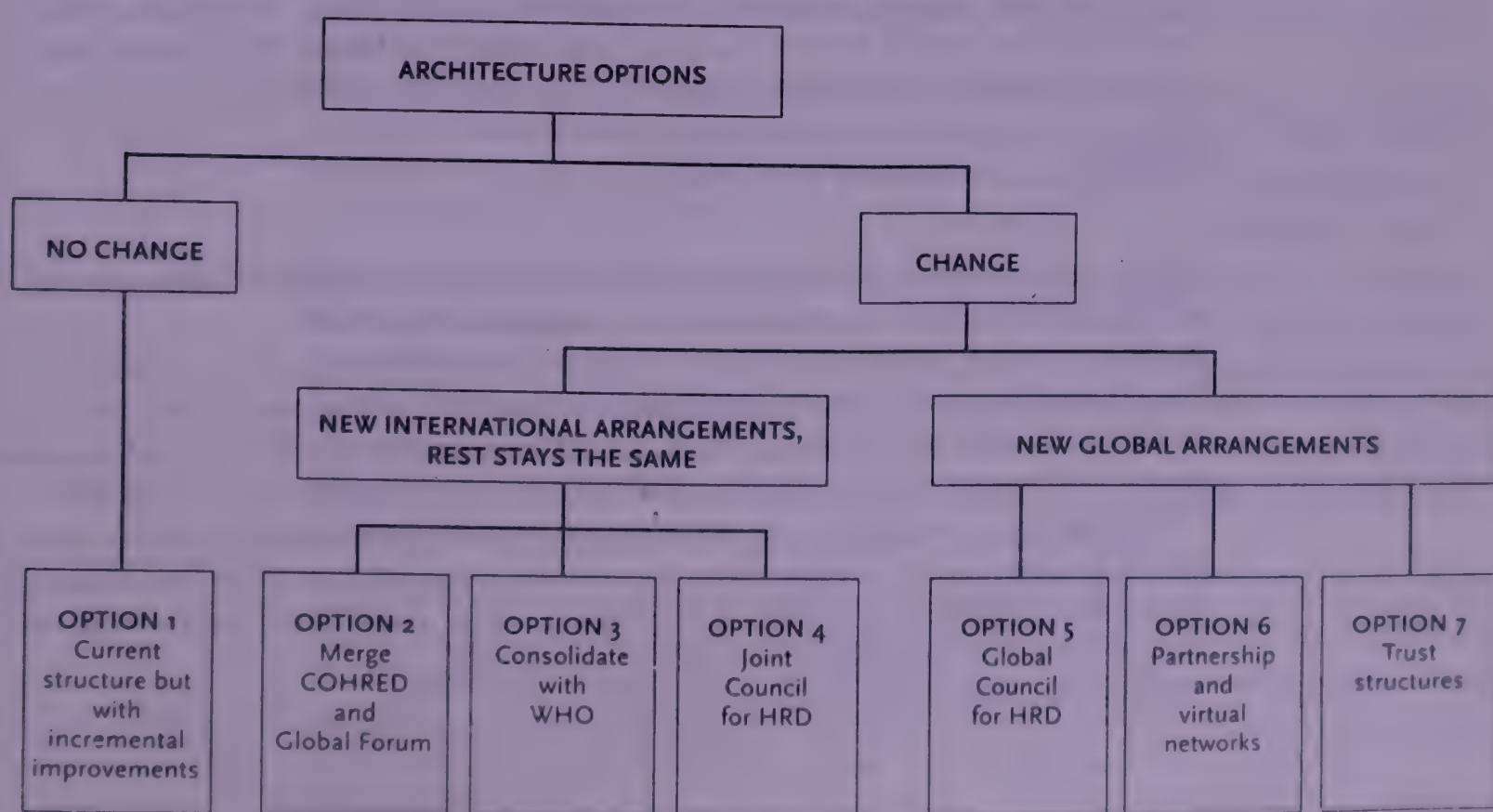
Options for a new global architecture

Identification and brief descriptions

In proposing options for a new global architecture, the needs of a range of stakeholders in health research for development (HRD) need to be considered. The various consultations and analyses revealed widespread agreement that the current global structures and procedures for health research for development do not effectively serve the needs of these stakeholders. This annex outlines a number of potential options for modifying the structure of the global health research system, covering a range of categories of global actors interested in promoting the cause of HRD. There are, of course, many other possible options, and the suggestions given here should be taken as examples of what might be considered rather than an exhaustive listing.

The options outlined below have been derived from the various suggestions made in the consultations and analyses. They also reflect the discussions in the body of the paper about values and operating principles. The options range from maintenance of the status quo (no change), through change to a few existing international organizations, to the creation of new global arrangements (Fig. 2). Each of the options for change would modify significantly the present pattern. All assume that the present mechanisms and procedures for discussion, collective decision-making, and governance, are not adequate to meet current needs. Note that the order in which they are presented is not intended to imply any preference. The options are described briefly and no judgement is offered; more detailed discussion, including

Fig. 2. Options for the architecture of the global health research system



analyses of functions and arguments for and against the various options, is available separately.

No change

Option 1—Preserve current structure of international organizations.

This first option would retain the present global pattern across all ten categories of the stakeholders defined for this discussion (see Table 1). Under this option, it would of course be possible to seek improvements in service and performance related to existing methods and procedures.

In this arrangement, the mandates of the major international bodies, such as COHRED and the Global Forum, and the role of WHO and its global and regional Advisory Committees on Health Research (ACHRs) would be unchanged. Their governing bodies and managers would be encouraged to improve their products and services through improvements in working procedures.

Change to some existing international organizations

The three options presented here affect only two or three organizations in one category, labeled as international health organizations. Hence, these options would not change relationships among the many other organizations in the nine other categories of stakeholders. These options would seek to promote greater coordination between WHO, the Global Forum and COHRED at the international level, while making no proposals for greater coordination among stakeholders in the other nine categories.

Option 2—Merge COHRED and the Global Forum into one organization.

To rationalize the perceived confusion and duplication between these two organizations, their legal, governance, and management structures should be consolidated into a single nonprofit organization, with only one governing body, secretariat, newsletter, logo, etc. The combined organization would inherit the mandates and goals of its two predecessors; it would be charged with continuing, expanding, and improving their range of products and services. The new single NGO would also of course inherit their relationships with WHO and with the many stakeholders worldwide, and be expected to continue nurturing them.

[Suggested by some donors in consultations.]

Option 3—Disestablish COHRED and the Global Forum as discrete and autonomous entities, but preserve and consolidate their functions within WHO.

In recognition of WHO's worldwide mandate and revived capacities, COHRED and the Global Forum would be terminated as legal NGOs. However, their functions would be transferred to WHO, which would be expected to continue and improve them. This would imply reviewing and perhaps adjusting the role within WHO of the Advisory Committee on Health Research. If this option were to be pursued, it would be essential to recognize the importance of the services of the two organizations, the interests of donors in promoting them, and their relationships with numerous government and NGO bodies worldwide.

[Suggested by some donors in consultations.]

Option 4—Improve coordination of WHO, COHRED, and Global Forum by creating a new coordinating Joint Council for Health Research for Development.

As in Option 1, this option would leave untouched the basic mandates and structures of COHRED, the Global Forum, the ACHR, and other bodies such as CIOMS. But it would create an additional formal body, a Joint Council, with the charge of encouraging the existing governing boards and managements to improve their cooperation and coordination, and hence their products and services to users.
[Suggested by some observers.]

Creation of new global arrangements

These three options would create new global arrangements designed to include representatives of **all** organizations and networks. They would seek to address the needs and interests of the numerous organizations in all ten categories of stakeholders in health research for development.

Option 5—Create a new Global Council to represent the interests of all stakeholders.

This option assumes that the many stakeholders in health research for development today are willing to create an agreed structure and procedures for collective decision-making, in effect a true *community*. Representatives from the ten categories would design some form of worldwide council with a supporting secretariat. The council would meet periodically to consider issues of common interest and decide on common actions.

[Suggested by some observers and comparative experience in similar fields.]

Options 1–5 are conceived to be mutually exclusive. However, options 6 and 7 offer flexible and new ways of organizing which might be applied not only in isolation, but also together with the formal, legal arrangements in options 1–5 to improve their effectiveness.

Option 6—Expand use of cooperative methods using modern techniques of management and information.

This option would not create a new formal and legal organization. Instead, it would recognize that the evolving availability and power of computers, internet communications, information technology, and project management enable task groups to communicate and work efficiently, no matter where their members are located.

Moreover, it would build on the existing and growing experience of numerous efforts working with such labels as partnerships, networks, initiatives, and alliances. Some of these are legal entities, while many others are informal but disciplined task groups. These methods are flourishing, not only in the health field, but also in other scientific, professional, and commercial fields. They offer better and more flexible communications and cooperation at lower costs, i.e. with little or no expense to support standing organizations with boards and secretariats.

While this option would rely heavily on information and communications technology (ICT) and use electronic or so-called “virtual” methods, these methods would not be sufficient by themselves; the experience of many professional networks shows that communicating *electronically* must be supplemented periodically by meetings to communicate *personally*. In short, new “high-tech” methods typically do not work successfully without companion old-fashioned “high-touch” techniques. Note that

the techniques of partnerships and virtual networking do not work loosely or casually; on the contrary, they **require** structure, governance, management, trust, and self-discipline by participants.

[Suggested by partnership experience of WHO and Global Forum, and by health researchers in Asia in conducting their regional consultation; also by current practice in various industries.]

Option 7. Create a mosaic of trusts to serve various needs at various levels and regions. This option builds on a growing body of successful experience—the Health Research Trust in Tanzania, the Health Systems Trust of South Africa, and emerging experience in the reorganized INCLEN. It proposes that the legal mechanism of a non-profit trust would be a useful and flexible means for addressing the needs of stakeholders in health research for development. Each trust would be a legal entity with a corporate personality, hence authorized to attract and manage funds and assets in pursuit of agreed objectives. The trust mechanism could be used by various configurations of stakeholders — national, regional, and international. Hence, as a number of trusts are created, they would gradually build up a mosaic of flexible and effective organizations.

[Suggested by contributors to the concept paper coordinated by Tikki Pang.]

These options should be assessed using the criteria listed in section 4.2.5. The matrix in Table 2 suggests how options and criteria could be considered together to assist in selecting the option most appropriate for the revitalized health research system.

Table 2. Matrix for assessing options for the structure of the health research system

Option	1	2	3	4	5	6	7
	Current structures with improvements	Merge COHRED and Global Forum	Disband COHRED and Global Forum, consolidate with WHO	Joint International Council for HRD	Global Council for HRD	Expand partnerships & virtual networks	Trust structures
1. Robustness							
2. Competence & effectiveness							
3. Credibility & accountability with multiple stakeholders							
4. Ability to champion HRD							
5. Credibility & ability to generate research funding							
6. Support national, regional & international entities in their organizational effectiveness							
7. Appropriate governance & good practice							
8. Cost-effectiveness							

ANNEX 2

List of contributors

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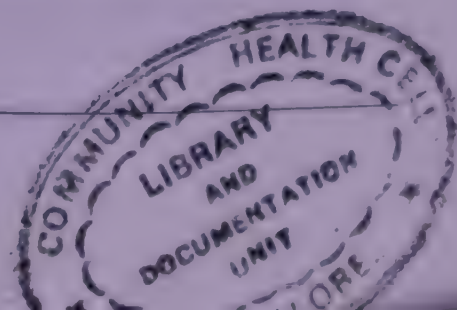
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Prof. Paul N. Levett, (Rapporteur), Scientific Sec., CHRC School of Clinical Medicine & Research, Barbados.

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Consultation with EEC and DFID

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Joseph Kasonde, COHRED, Geneva.

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United Kingdom

Dr. Julian Lob-Levyt, Chief of Health and Population, Department for International Development (DFID), 94 Victoria Street, London SW1E 5JL.

USA Meeting of Funding and Development Agencies

Sandra Aresta, World Bank; Seth Berkley, IAVI; Newton Bowles, UNICEF; Bruce Dick, UNICEF; David Fraser, INCLIN; Kingsley Gee, WHO-UN; Dale Hill, World Bank; Jane Hughes, Rockefeller; Maureen Law, World Bank; Sarah Macfarlane, Rockefeller (chair); Ariel Pablos-

Mendez, Rockefeller; Ulysses Panisset, PAHO; Pat Rosenfield, Carnegie; Anthony So, Rockefeller. Secretariat: Joe Kasonde; Steve Tollman.

Meeting at London School of Tropical Medicine and Hygiene

Andy Haines, Dean; Gill Walt, Reader in Health Policy; Sandy Cairncross; Anne Mills; Ruairi Brugh; John Porter; Kelley Lee; Dinesh Sethi. Secretariat: Pat Butler; Steve Tollman; Joe Kasonde.

Preparatory (synthesis) meeting, Prangins

African Region

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Professor Mutuma Mugambi, Kenya Methodist University, PO Box 2382, Meru, Kenya.

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Asian Region

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Caribbean Region

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Eastern Europe and Newly Independent States

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Middle East Region

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Dr Javid Hashmi, 48 chemin des Coudriers, 1209 Geneva Switzerland.

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